

**LIE REVIEW FORM
(CHECKLIST)**

Application SN 9/4/21, 676

Complete review by (date): 3/29/84

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No deficiencies found for this application

No evidence of appeal conference

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Filing Date of Brief 11/5/03

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OTHER

Application No. 09/421,676
Paper Dated: November 3, 2003
Attorney Docket No. 964-991369

26/Appeal Brief
T. Smith
11/28/03



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application No. : 09/421,676
Applicant : BERNHARD GOTZ
Filed : October 20, 1999
Title : INDUSTRIAL TRUCK WITH A REAR WEIGHT
AND INTERNAL COMBUSTION ENGINE
Group Art Unit : 3619
Examiner : Michael Mar

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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SUPPLEMENTAL APPEAL BRIEF

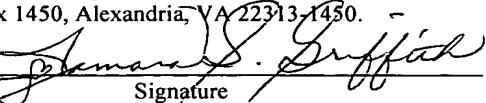
Sir:

This Supplemental Appeal Brief is submitted in support of the Notice of Appeal mailed on April 28, 2003 and received by the Patent Office on May 2, 2003. The Notice of Appeal appeals the final rejection of claims 1-19, 21, and 22.

The headings used hereinafter and the subject matter set forth under each heading are in accordance with 37 C.F.R. § 1.192(c).

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Tamara S. Griffith

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I

REAL PARTY IN INTEREST

Linde Aktiengesellschaft is the Assignee of the entire right, title, and interest to the above-identified application and, as such, is the real party in interest in this Appeal.

II

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to the Appellant, the Appellant's legal representative, or the Assignee of the above-identified application which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending Appeal.

III

STATUS OF CLAIMS

Claims 1-19, 21, and 22 are finally rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention;

Claims 1, 7, 21, and 22 are finally rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,202,453 to Wilkes, Jr. et al. (hereinafter "Wilkes");

Claims 2-6 and 8-19 are finally rejected under 35 U.S.C. § 103 as being directed to subject matter which would have been obvious to one of ordinary skill in the art at the time the invention was made from the combined teachings of Wilkes in view of U.S. Patent No. 6,085,858 to Wakana et al. (hereinafter "Wakana");

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Claim 21 is finally rejected under the judicially created doctrine of obviousness-type double patenting over claim 1 of U.S. Patent No. 6,454,034 B1 to Gotz (hereinafter "Gotz");

Claims 1-19, 21, and 22 are reproduced in Appendix A which is attached hereto.

IV

STATUS OF AMENDMENTS

A final Office Action was issued on December 4, 2001 and a Response After Final Rejection was submitted in this case on March 4, 2002 arguing for the allowability of the claims but making no claim amendments. There were no claim changes made after the final Office Action dated December 4, 2001. A Notice of Appeal was mailed on May 6, 2002 and an Appeal Brief was submitted on July 15, 2002. In response to the Appeal Brief, the Examiner issued a new final Office Action dated October 28, 2002 reopening prosecution and setting forth new grounds of rejection based on new prior art. Appellant submitted a new Notice of Appeal on April 28, 2003 and this Supplemental Appeal Brief is submitted in support of that Notice of Appeal. The claims on appeal are the claims as amended by the Amendment of October 16, 2001, which are finally rejected in the final Office Action of October 28, 2002.

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V

SUMMARY OF THE INVENTION

The claims on appeal are directed toward an industrial truck having a frame 3 and a rear weight 1 separate from the frame 3 and connected to the frame 3. An internal combustion engine 4 is mounted on the rear weight 1 such that vibrations from the engine 4 are transmitted from the engine 4 to the rear weight 1 and from the rear weight 1 to the frame 3.

As discussed in the present specification at pages 1 and 2, a problem with conventional industrial trucks in which the engine is mounted on the frame is that vibrations from the engine are transmitted directly to the vehicle frame and then into the driver's cab. These vibrations can be annoying to the driver. In Appellant's invention, this problem is overcome by mounting the internal combustion engine on the rear weight. Vibrations from the engine are thus transmitted into the rear weight, not into the frame. Because of its large mass, the rear weight is excited to vibrate only to a very small extent by the engine vibrations. Thus, vibrations transmitted to the other areas of the truck are greatly reduced due to this damping effect of the rear weight and, particularly, vibrations felt by the driver are significantly reduced.

VI

ISSUES PRESENTED

The following issues are presented in this Appeal:

- a) Are claims 1-19, 21, and 22 indefinite?
- b) Are claims 1, 7, 21, and 22 anticipated by Wilkes?

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- c) Are claims 2-6 and 8-19 directed towards obvious subject matter in light of Wilkes taken in view of Wakana?
- d) Is claim 21 obvious under the judicially created doctrine of obviousness-type double patenting in view of Gotz?

VII

GROUPING OF CLAIMS

Claims 1-19, 21, and 22 do not stand or fall together but can be grouped according to the following:

- a) Claim 1 stands or falls independently;
- b) Claim 21 stands or falls independently;
- c) Claim 22 stands or falls independently;
- d) Claim 7 stands or falls independently; and
- e) Claims 2-6 and 8-14 stand or fall together.

The support for the independent consideration of each grouping of claims is addressed in the arguments set forth in the Argument section of this Appeal Brief and also for the following reasons:

Independent claims 1, 21, and 22 are of differing scope and each contain different limitations which are independently patentable over the cited art for the specific reasons discussed below. Dependent claims 2-6 and 8-19 depend from claim 1 but contain limitations different from those in claim 1 that render the claims patentable independent of claim 1. Claim 7 depends from claim 1, but contains additional limitations that render claim 7 patentable independent of claim 1.

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VIII

ARGUMENT

Each issue presented for review is addressed hereinafter under the appropriate heading:

1. 35 U.S.C. § 112, first paragraph

None.

2. 35 U.S.C. § 112, second paragraph

a) Claims 1-19, 21, and 22

Claims 1-19, 21, and 22 stand rejected on the grounds that the phrase in independent claims 1, 21, and 22 that the rear weight is “separate from the frame and connected to the frame” is unclear, indefinite, and contradictory. The Examiner states that “an element can not be separate from a frame and connected to the frame” (Office Action at paragraph 3). Appellant respectfully disagrees.

Appellant encloses herewith as Appendix B a copy of page 1200 of The Random House College Dictionary, Revised Edition, Copyright 1988 showing the definition of the word “separate”. The definitions of this term include “13. distinct, unique; 15. existing or maintained independently; 16. individual or particular”. In the previous Office Actions and discussed particularly in the Response dated March 4, 2002 and the Amendment dated October 16, 2001, the Examiner has continually equated the “rear weight” of the claimed invention with any mass or device toward the rear of a vehicle. In order to distinguish the rear weight from such other devices, such as the frame of the vehicle or the engine, the Appellant amended the independent claims to claim each of the frame, the rear weight, and

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the engine as separate, i.e., distinct or individual, elements. Appellant also positively recited that the rear weight was "separate from" the frame, i.e., that the rear weight was a separate, distinct element from the frame. These amendments were made to clarify that the rear weight is a separate, individual, distinct element from either the frame or the engine. Therefore, although the rear weight is "separate from" the frame (i.e., is a distinct or separate element than the frame), the rear weight is connected to the frame as described in the pending specification and clearly shown in the drawings. Appellant does not believe this phrase renders the claims indefinite but simply limits the claims to having a rear weight that is "separate from", i.e., distinct or independent from, the frame or the engine. Therefore, claims 1-19, 21, and 22 are not indefinite.

3. 35 U.S.C. § 102

a) Claim 1

Claim 1 is directed to an industrial truck having a frame 3 and a rear weight 1 separate from, i.e., distinct from, the frame 3 and connected to the frame 3. An internal combustion engine 4 is mounted on the rear weight 1, with the rear weight 1 positioned between the engine 4 and the frame 3 such that vibrations from the engine 4 are transmitted from the engine 4 to the rear weight 1 and from the rear weight 1 to the frame 3.

Wilkes is directed to an articulated mine service vehicle having a power unit 12 with an engine 38 attached by an articulated joint 16 to a utility unit 14 having a crane 52.

In discussing Wilkes in paragraph 5 of the final Office Action, the Examiner states that Wilkes includes "...a frame (14), a 'rear weight' (body of power unit 12; see especially column 5, lines 39-43) connected to the frame; an internal combustion engine (ICE 38)...mounted on the rear weight such that the rear weight is positioned between the engine

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and the frame such that vibrations from the engine are inherently transmitted from the engine to the rear weight and from the rear weight to the frame...". Appellant respectfully disagrees with this assessment. Firstly, the "frame 14" identified by the Examiner is not a vehicle frame but is a utility unit 14 having a crane 52. The Examiner has again disregarded the "rear weight" set forth in the claimed invention and has broadly equated the "body of power unit 12" with the claimed rear weight. This is simply incorrect.

Conventional industrial truck "rear weights" or counterweights are well known in the industrial truck field. For example, U.S. Patent No. 4,029,340 to Chelin, identified by the Examiner, discloses a conventional industrial truck having a conventional rear weight or counterweight 18 attached to the rear of the vehicle (Fig. 1 and column 2, lines 33-34). U.S. Patent No. 4,580,811 to Wykhuis et al., identified by the Examiner, discloses rear weights 52 mounted on the rear end of the vehicle, such as a mower. Additionally, Appellant forwarded copies of U.S. Patent Nos. 3,851,776 and 4,173,264 to the Examiner with the Amendment dated October 16, 2001 to further illustrate the common understanding of the term "rear weight" in the field of industrial vehicles. U.S. Patent No. 3,851,776 discloses a tracked vehicle having a digging bucket 6 mounted on a turret 3. The vehicle has a frame 1 and a counterweight 7 movably attached to the frame (column 2, lines 4-20). U.S. Patent No. 4,173,264 discloses a fork lift truck having a rear frame section 38. This patent does not show the counterweight but simply states that "[a] counterweight may be mounted on rear frame section 38 behind end plate 74." Thus, Appellant believes one of ordinary skill in the industrial truck art would clearly understand that the term "rear weight" refers to a component different from, i.e., separate from, the vehicle frame, the engine, or the body of the Wilkes power unit 12. Additionally, the present specification at page 1, lines 17-20; page

N/A
102 ref

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2, lines 9-16; page 3, line 37 to page 4, line 3; and page 4, line 34 to page 5, line 2, clearly describes the claimed "rear weight" in a manner that would be easily understood by one of ordinary skill in the industrial truck art as a component separate from the vehicle frame and made out of high internal damping material, such as gray cast iron. In his rejections, the Examiner is again broadly equating any portion of a vehicle having mass as equivalent to the claimed "rear weight". This is simply incorrect. This interpretation completely disregards the intended and accepted meaning of the term "rear weight" in the field of industrial trucks.

Additionally, Wilkes does not teach or suggest the claimed industrial truck in which the engine is mounted on the rear weight and the rear weight is positioned between the engine and the frame such that vibrations from the engine are transmitted from the engine to the rear weight and from the rear weight to the frame. The Examiner simply designates the utility unit 14 as a "frame" and the power unit 12 as the "rear weight" with the engine 38 mounted on the power unit 12 as being equivalent to the claimed invention. Again, Appellant respectfully disagrees with this interpretation. Appellant believes one of ordinary skill in the industrial truck art would clearly understand that an industrial truck "frame" refers to the framework of the industrial truck and not simply to an attached, articulated unit.

*only relevant
for 103's*

b) Claim 21

Claim 21 is directed to an industrial truck comprising a frame 3, a rear weight 1 separate from the frame 3 and connected to the frame 3, and an internal combustion engine 4 fastened to the rear weight 1 such that the internal combustion engine 4 is carried on the industrial truck by a rear weight 1.

Claim 21 should be considered independent of independent claim 1 on the grounds that claim 21 does not require that the rear weight be positioned between the engine

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and the frame such that vibrations are transmitted from the engine to the rear weight and then to the frame. Claim 21 more broadly recites that the internal combustion engine 4 is fastened to the rear weight 1 and carried on the industrial truck by the rear weight 1.

As discussed above, Wilkes does not disclose an industrial truck rear weight. Nor does Wilkes disclose a rear weight separate from the frame and connected to the frame, with an internal combustion engine fastened to the rear weight such that the internal combustion engine is carried on the industrial truck by the rear weight. In Wilkes, the engine 38 is mounted on the power unit 12 that is attached to the utility unit 14 by an articulated joint 16. Therefore, claim 21 is patentable over Wilkes.

c) Claim 22

Claim 22 is directed to an industrial truck comprising a frame 3, a rear weight 1 separate from the frame 3 and connected to one end of the frame 3, and an internal combustion engine 4 mounted on the rear weight 1 by fastening means 6 such that vibrations from the engine 4 are transmitted to the rear weight 1 by the fastening means 6 and such that the engine 4 is connected to the frame 3 by the rear weight 1.

Claim 22 should be considered independently of claims 1 or 21 in that claim 22 includes the specific limitation that the internal combustion engine 4 is mounted on the rear weight 1 by fastening means 6 such that vibrations from the engine 4 are transmitted to the rear weight 1 by the fastening means 6. Appellant believes the inclusion of the fastening means 6 renders claim 22 independently patentable with respect to either claims 1 or 21.

As discussed above, Wilkes simply does not disclose an industrial truck rear weight nor an equivalent thereto. As such, Wilkes does not disclose an internal combustion engine mounted on a rear weight by fastening means such that the vibrations from the engine

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are transmitted to the rear weight by the fastening means. Therefore, claim 22 is patentable over Wilkes.

d) Claim 7

Claim 7 depends from claim 1 and includes the limitation of a hydraulic unit fastened to the internal combustion engine such that the hydraulic unit and the internal combustion engine are mounted directly on the rear weight.

Claim 7 depends from claim 1 but should be considered independently of claim 1 and claims 21 and 22. Claim 7 includes the limitation of a hydraulic unit fastened to the internal combustion engine with both the hydraulic unit and the internal combustion engine mounted directly on the rear weight. Appellant believes this limitation makes claim 7 independently patentable over claims 1, 21, or 22. The ability to mount both an internal combustion engine and a hydraulic unit directly on the rear weight allows simpler and easier changeout of the engine and hydraulic system by removing the rear weight from the back of the industrial truck and replacing it with another rear weight having an engine and hydraulic unit mounted thereon.

As discussed above, Wilkes does not teach the claimed industrial truck with an internal combustion engine mounted on the rear weight. Moreover, Wilkes does not teach a hydraulic unit fastened to the internal combustion engine with both the hydraulic unit and internal combustion engine mounted on the rear weight, as specifically claimed in claim 7.

The Wilkes mine vehicle 10 has a power unit 12 and a utility unit 14. Wilkes does disclose at column 3, line 64 to column 4, line 11 that the engine 38 is provided with a gear box transmission 42 driving three hydraulic pumps 44, 45, and 46 to provide hydraulic fluid under pressure to drive motors 26. However, this is not equivalent to the claimed

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invention. As shown particularly in Fig. 4 of Wilkes, the engine 38 is mounted on the power unit 12 with the hydraulic pumps 44, 45, and 46 connected to a gear box transmission 42 on the front of the engine 38. None of these units is mounted directly on the "rear weight" of an industrial truck as claimed in claim 7.

4. 35 U.S.C. § 103

a) Claims 2-6 and 8-19

Claims 2-6 and 8-19 stand rejected under 35 U.S.C. § 103(a) for obviousness over the teachings of Wilkes in view of the teachings of Wakana.

Wilkes has been discussed above. Wakana discloses a suspension assembly in which an engine 3 is mounted on resilient engine mounts 4. The engine is attached to the vehicle frame through a torque rod 6 (Wakana at column 8, lines 30-33). Wakana, either alone or in combination with Wilkes, does not teach or suggest an industrial truck as claimed in claim 1 having a rear weight 1 separate from the frame 3 and an internal combustion engine 4 mounted on the rear weight 1, with the rear weight 1 positioned between the engine 4 and the frame 3 such that vibrations from the engine 4 are transmitted from the engine 4 to the rear weight 1 and from the rear weight 1 to the frame 3, as claimed in claim 1. Therefore, since claims 2-6 and 8-19 depend either directly or indirectly from claim 1, claims 2-6 and 8-19 are allowable over the cited art. Additionally, claim 3 includes the limitation that the internal combustion engine is mounted on fastening means located on the rear weight such that engine vibrations are transmitted directly to the rear weight, not the frame. Claims 6, 13, and 14 include the limitation of a torque support (shown as reference number 7 in Figs. 1 and 2) that connects the internal combustion engine with the rear weight. Claim 12 includes the limitation that the torque support extends between and is connected to both the internal

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Appellant's Brief

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combustion engine and the rear weight. None of these specific limitations is taught or suggested in the cited prior art, either alone or in combination. Therefore, claims 2-6 and 8-19 are patentable over the cited prior art.

5. Obviousness-Type Double Patenting

Claim 21 is rejected for obviousness over claim 1 of U.S. Patent No. 6,454,034 B1. As discussed in the accompanying Letter, a Terminal Disclaimer and appropriate fee are submitted concurrently herewith. Pursuant to 37 C.F.R. § 1.195, entry of the Terminal Disclaimer and reversal of this rejection are respectfully requested.

IX

CONCLUSION

The claims define a unique industrial truck. The Examiner has not addressed all of the limitations of the independent claims or the corresponding dependent claims. In order to establish a *prima facie* case, the Examiner must show that each limitation is met or made obvious by the applied prior art and the Examiner has failed to do so. The preponderance of evidence clearly establishes the allowability of claims 1-19, 21, and 22. Reversal of all of the Examiner's rejections and allowance of these claims are respectfully requested.

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Appellant's Brief

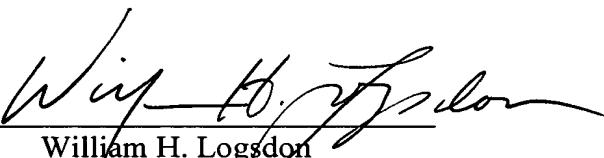
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A check in the amount of \$330.00 accompanies this Appeal Brief. The Commissioner of Patents and Trademarks is hereby authorized to charge any additional fees which may be required to Deposit Account No. 23-0650. Please refund any overpayments to Deposit Account No. 23-0650. An original and two copies of this Supplemental Appeal Brief are enclosed.

Respectfully submitted,

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Appellant's Brief

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APPENDIX A

1. An industrial truck, comprising:
 - a frame;
 - a rear weight separate from the frame and connected to the frame; and
 - an internal combustion engine, wherein the internal combustion engine is mounted on the rear weight such that the rear weight is positioned between the engine and the frame such that vibrations from the engine are transmitted from the engine to the rear weight and from the rear weight to the frame.
2. The industrial truck as claimed in claim 1, wherein the internal combustion engine is oriented in a substantially transverse direction of the industrial truck.
3. The industrial truck as claimed in claim 1, including least one fastening means for the internal combustion engine located on the rear weight, wherein the internal combustion engine is mounted on the fastening means such that the engine can oscillate and such that engine vibrations are transmitted directly to the rear weight.
4. The industrial truck as claimed in claim 1, wherein the internal combustion engine is mounted such that the engine can oscillate around an axis that extends in a substantially transverse direction of the industrial truck.

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5. The industrial truck as claimed in claim 3, wherein the fastening means include an elastic damping element.

6. The industrial truck as claimed in claim 4, including a torque support that connects the internal combustion engine with the rear weight, the torque support located at a distance from the axis.

7. The industrial truck as claimed in claim 1, including a hydraulic unit fastened to the internal combustion engine such that the hydraulic unit and internal combustion engine are mounted directly on the rear weight.

8. The industrial truck as claimed in claim 2, including at least one fastening means for the internal combustion engine connected directly to the rear weight, wherein the internal combustion engine is mounted on the fastening means such that the engine can oscillate.

9. The industrial truck as claimed in claim 2, wherein the internal combustion engine is mounted such that the engine can oscillate around an axis that extends in a substantially transverse direction of the industrial truck.

10. The industrial truck as claimed in claim 3, wherein the internal combustion engine is mounted such that the engine can oscillate around an axis that extends in a substantially transverse direction of the industrial truck.

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11. The industrial truck as claimed in claim 4, wherein the fastening means include an elastic damping element.

12. The industrial truck as claimed in claim 9, including a torque support extending between and connected to both the internal combustion engine and the rear weight, the torque support located at a distance from the axis.

13. The industrial truck as claimed in claim 10, including a torque support that connects the internal combustion engine with the rear weight, the torque support located at a distance from the axis.

14. The industrial truck as claimed in claim 11, including a torque support that connects the internal combustion engine with the rear weight, the torque support located at a distance from the axis.

15. The industrial truck as claimed in claim 2, including a hydraulic unit fastened to the internal combustion engine.

16. The industrial truck as claimed in claim 3, including a hydraulic unit fastened to the internal combustion engine.

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17. The industrial truck as claimed in claim 4, including a hydraulic unit fastened to the internal combustion engine.

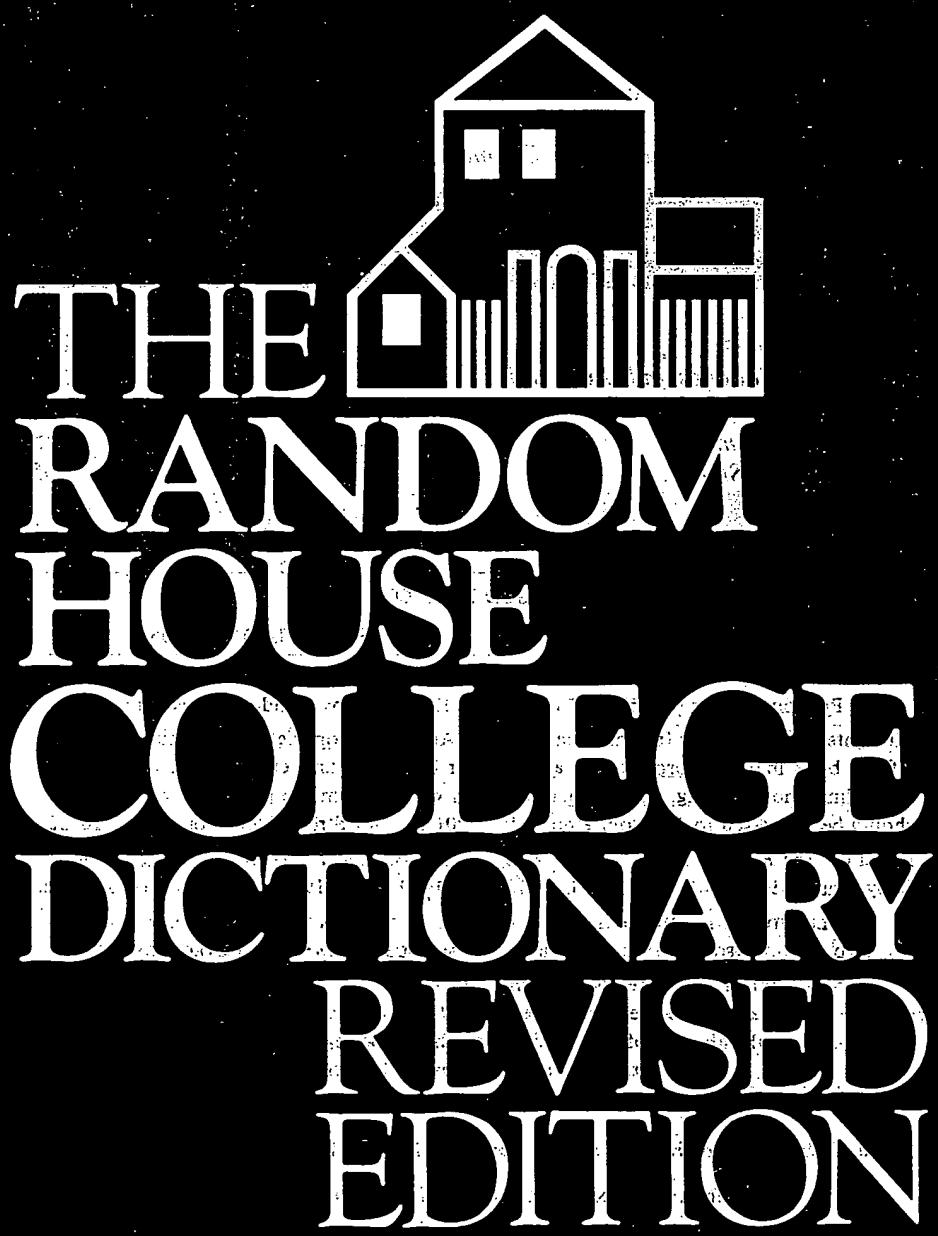
18. The industrial truck as claimed in claim 5, including a hydraulic unit fastened to the internal combustion engine.

19. The industrial truck as claimed in claim 6, including a hydraulic unit fastened to the internal combustion engine.

21. An industrial truck, comprising:
a frame;
a rear weight separate from the frame and connected to the frame; and
an internal combustion engine fastened to the rear weight such that the internal combustion engine is carried on the industrial truck by the rear weight.

22. An industrial truck, comprising:
a frame;
a rear weight separate from the frame and connected to one end of the frame;
and
an internal combustion engine mounted on the rear weight by fastening means such that vibrations from the engine are transmitted to the rear weight by the fastening means, and such that the engine is connected to the frame by the rear weight.

APPENDIX B



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A Dictionary of the English Language

1

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Se·oul (sööl, sə'öö'l; Kor. sye'öö'l), *n.* a city in and the capital of South Korea, in the W part. 6,889,470. Japanese, Keijo.

Sep., 1. September. 2. Septuagint.

sep., 1. sepal. 2. separate.

se·pal (sə'pal), *n.* Bot. one of the individual leaves or parts of the calyx of a flower. [*< L séparābilis* (*is*) = *separ*(är)e (*to*) *SEPARATE* + *-ibilis* ABLE] —*se'paled*, *se'palling*, *adj.*

-sepalous, a combining form of *sepal* and *-ous*: *polysepalous*.

sep·a·ra·ble (sep'ə rə bəl, sep're bəl), *adj.* capable of being separated, parted, or dissociated. [*< L séparabilis* (*is*) = *separ*(är)e (*to*) *SEPARATE* + *-ibilis* ABLE] —*sep'a·ra·bil·i·ty*, *sep'a·ra·ble·ness*, *n.* —*sep'a·ra·bly*, *adv.*

sep·a·rate (*v.* *sep'a rat'*; *adj.*, *n.* *sep'er it*), *v.t.* 1. to keep apart, as by an intervening barrier or space: *to separate two fields by a fence*. 2. to put, bring, or force apart; part. 3. to set apart; disconnect; dissociate. 4. to remove or sever from association, service, etc. 5. to sort, part, divide, or disperse (an assemblage, mass, compound, etc.), as into individual units or elements. 6. to take by parting or dividing; extract. —*i.n.* 7. to part company; withdraw from personal association (often fol. by *from*). 8. (of a married pair) to stop living together but without getting a divorce. 9. to draw or come apart; become divided, disconnected, or detached. 10. to become parted from a mass or compound. 11. to take or go in different directions. —*adj.* 12. detached; disconnected, or disjoined. 13. unconnected; distinct; unique: *two separate questions*. 14. being or standing apart; dispersed. 15. existing or maintained independently; *separate organizations*. 16. individual or particular: *each separate item*. 17. (sometimes cap.) noting or pertaining to a church or other organization no longer associated with the original or parent organization. —*n.* 18. something separate. 19. offprint (def. 1). [late ME *< L séparat(us)* (*ppc. of séparare*) = *sé*- *se-* + *par-pot* (see *PARE*) + *-atus* -ATE] —*sep'a·rate·ly*, *adv.* —*sep'a·rate·ness*, *n.*

Syn. 1. 2. *sever*, *split*. **SEPARATE**, *divide* imply a putting apart or keeping apart of things from each other. To *SEPARATE* is to remove from each other things previously associated: *to separate a mother from her children*. To *divide* is to split or break up carefully according to measurement, rule, or plan: *to divide a cake into equal parts*. 3. *disengage*. 15. independent. —*Ant.* 1-3. *unite*, *connect*.

sep·a·ra·tion (sep'a rá'shan), *n.* 1. the act, state, or an instance of separating. 2. the state of being separated. 3. a place, line, or point of parting. 4. a gap, hole, rent, or the like. 5. Law. cessation of conjugal cohabitation, as by mutual consent. 6. *Rocketry*. the time or act of releasing a burned-out stage of a missile from the remainder. [late ME *< L séparation* (*s. of séparatiō*)]

separa·tion cen·ter, a place at which military personnel are processed for release from service.

sep·a·ra·tist (sep'a rá'tist, -är'ə tist), *n.* a person who practices or advocates separation, esp. ecclesiastical or political separation. —*sep'a·ratism*, *n.*

sep·a·ra·tive (sep'a rá'tiv, -är'ə tiv), *adj.* 1. tending to separate. 2. causing separation. [*< LL séparativus*] —*sep'a·ra·tive·ly*, *adv.* —*sep'a·ra·tive·ness*, *n.*

sep·a·ra·tor (sep'a rá'tor), *n.* 1. a person or thing that separates. 2. any of various apparatus for separating one thing from another, as cream from milk. [*< LL séparator*] —*sep·a·ra·to·ry* (sep'er tō'ē, -tōr'ē), *adj.* serving to separate. [*< NL séparatoriūs*]

Se·phar·dim (sə fär'dim, -fär dēm'), *n., pl.* *sing.* -di (-dē, -dē'). Jews of Spain and Portugal or their descendants. Cf. Ashkenazim. [*pl. of ModHeb sephardī* = Heb *sephārād* (region mentioned in Bible (Obadiah 20) and assumed to be Spain) + i suffix of appurtenance] —*Se-phar·dic*, *adj.*

Se·pher To·rah (sə fer' tō rá'; Eng. sa'fer tōr'ə, tōr'ə), *pl.* *Si·phri* *To·rah* (sə frā' tō rá'), *Eng.* *Sepher Torah*, Hebrew. a scroll of the Torah. [lit. book of law]

se·pi·a (sə'pé ā), *n.* 1. a brown pigment obtained from the inklike secretion of various cuttlefish and used in drawing. 2. a drawing made with this pigment. 3. a cuttlefish of the genus *Sepia* or related genera. —*adj.* 4. of a brown, grayish brown, or olive brown similar to that of sepiia ink. [*< L < Gk sépia* cuttlefish; akin to *sepsis* SERSIS]. —*se'pi·a·like*, *adj.* —*se'pic* (sə'pik, sep'lik), *adj.*

se·pi·o·lite (sə'pé ā līt'), *n.* meerschaum (def. 1). [*< G Sepiolit* (*< Gk sépion*) cuttlebone + G -lit- lime]

se·poy (sə'pōi), *n.* (in India) 1. a native soldier trained in the British army. 2. (formerly) such a soldier serving in the British Indian army. [var. of *sepahi* *< Urdu* *< Pers. spāhī* horseman, soldier *< spāhī* army]

Se·poy Re·bel·lion, a revolt of the sepoys troops in British India (1857-59). Also called *Se·poy Mu'tiny*, *Indian Mutiny*.

sep·pu·ku (sə'pō'kōō), *n.* (in Japan) hara-kiri. [*< Jap.* *sep·sis* (sep'sis)], *n.* *Pathol.* bacterial invasion of the body, esp. by pyogenic organisms: *wound sepsis*. [*< Gk sépsis* decay; cf. *sepein* to make rotten]

sept (sep't), *n.* 1. (in Scotland) a branch of a clan. 2. a clan, esp. with reference to tribes or families in Ireland. 3. *Anthropol.* a group believing itself derived from a common ancestor. [*< L sépt(um)* fold (infig. use, e.g., *Sept of Christ*)]

sept-, a learned borrowing from Latin meaning "seven," used in the formation of compound words: *septet*; *septillion*. Also, *esp. before a consonant*, *septi-*. [*< L septem*]

Sept., 1. September. 2. Septuagint.

sep·ta (sep'tə), *n.* *pl.* *sep·tas* (sep'təz), *n.* *pl.* *sep·tal* (sep'təl), *adj.* *Rel.* of or pertaining to a septum.

early Roman calendar; the -re of ME *Septembre* [*< setembre*]

Septem·ber Mas·sac·re, (in the French Revolution) the massacre of royalists and other inmates of the prison Paris, September 2-6, 1792.

Sep·tem·bris·t (sep tem'bri'st), *n.* a person who instigated or took part in the September Massacre. [*SEPTEMBRE*-IST, modeled on Pg *setembrista* (with reference to revolution of September 1836 in Portugal); r. earlier *sep brizer* *< F septembreur*]

sep·te·nar·y (sep'tə ner'ē), *adj.*, *n.* *pl.* *-nar·ies*. 1. of or pertaining to the number seven or forming a group of seven. 2. septennial. —*n.* 3. a group or set of seven. period of seven years. 5. the number seven. 6. Pros. *Pros.* *sep·te·nar·i·us* (sep'tə nár'ē as), a line of seven feet. [*L septenārius*] = *septen(i) seven apiece (septe(m) seven -nt distributive suffix) + -arius -ARY]*

sep·ten·de·ci·lion (sep'ten di sil'yən), *n.* *pl.* *-li·ons* (after a numeral) -lion, *adj.* —*n.* 1. a cardinal number represented in the U.S. and France by one followed by 54 zeros and, in Great Britain and Germany, by one followed by 54 zeros. —*adj.* 2. amounting to one septendecillion in nun [*< L septendecim* seventeen + -illion, as in *million*] —*sep·ten·de·ci·li·on*, *n.*

sep·ten·ni·al (sep ten'ē al), *adj.* 1. occurring every seven years. 2. of or for seven years. —*n.* 3. something occurs every seven years. [*< L septenni(s)* lasting 7 years (*sept(em) seven + -ennis* lasting a year *< annus* year + -AL)] —*sep·ten·ni·al·ly*, *adv.*

sep·ten·tri·on·al (sep ten'trē ūn⁹l), *adj.* northern. [*ME < L septentriōnalis* = *septem trīōn(es)* seven (Great Bear constellation) + -alis -AL]

sep·tet (sep tet'), *n.* 1. any group of seven persons. 2. a company of seven singers or musicians. musical composition for seven voices or instruments. *esp. Brit.* *sep·tette*. [*< G; see SEPT-*, -ET]

septi-, var. of *sept-*, before a consonant: *septilateral*.

sep·tic (sep'tik), *adj.* *Pathol.* 1. infective, usually with pus-forming microbe. 2. pertaining to sepsis; infected. [*< L sépticus* *< Gk séptikos* = *sépi*(ōs) rotted + -ikos -ic] —*sep·ti·cal·ly*, *adv.*

sep·ti·ce·mi·a (sep'ti sē'mē ē), *n.* *Pathol.* the invasion and persistence of pathogenic bacteria in the blood stream. Also, *sep·ti·cae·mi·a*. [*< NL*] —*sep·ti·ce·mic*, *sep·ti·cae·mic*, *adj.*

sep·ti·cial·d (sep'ti sid'ēl), *adj.* Bot. characterized by splitting through the septa or disseipments in dehiscence. —*sep·ti·cial·d·ly*, *adv.*

sep·tic tank', a tank in which solid organic sewage is decomposed and purified by anaerobic bacteria.

sep·ti·ra·gal (sep tif'ra gal), *adj.* Bot. characterized by the breaking away of the valves from the septa or disseipments in dehiscence. [*SEPTI-* + L *frag-* (see FRAGILE) + -AL] —*sep·ti·ra·gal·ly*, *adv.*

sep·ti·lat·er·al (sep'tə lat'ər al), *adj.* having seven sides.

sep·til·lion (sep til'yən), *n.* *pl.* *-li·ons*, (as after a numeral) -lion, *adj.* —*n.* 1. a cardinal number represented in the U.S. and France by one followed by 24 zeros and, in Great Britain and Germany, by one followed by 42 zeros. —*adj.* 2. amounting to one septillion in nun [*< F = sept seven + -illion, as in million*] —*sep·til·lic*, *n.*

sep·ti·va·lent (sep'tə vā'lēnt), *adj.* Chem. having valence of seven; heptavalent. Also, *septavalent*.

sep·tu·age·nar·ian (sep'chōō a ja năr'ē en), *adj.* the age of 70 years or between 70 and 80 years old. —*n.* *sep·tu·agenarian* person. [*< L septuagēnāris*]

sep·tu·age·na·ry (sep'chōō a ja' ne nr'ē or, esp. in Je' ne re'), *adj.*, *n.* *pl.* *-nar·ies*. *sep·tu·agenarian*. [*sep·tuagēnāris*] = *sep·tuagēnāris* seventy; *see Septuagint* + *-arius -ARY*

Sep·tu·a·ges·i·ma (sep'tōō a jes'ā ma, -tyōō, sep'chā), *n.* the third Sunday before Lent. Also called *Septuaginta Sun·day*. [*< eccl. L septuagēsima (dies) the se* tieth (day); r. ME *septuagesima* (me) *< OF*]

Sep·tu·a·gint (sep'tōō a jīnt', -tyōō, sep'chōō), *n.* oldest Greek version of the Old Testament, traditionally said to have been translated by 70 or 72 Jewish scholars the request of Ptolemy II. [*< L septuagēnāris* = *septem* seven + *-gēnāris* decade] —*Sep·tu·a·gint·al*, *adj.*

sep·tu·tom (sep'tōō tam), *n.* *pl.* *-ta* (-ta). Biol. a dividing membrane, or the like, in a plant or animal structure. [var. of L *saepitum* enclosure *< neut. of saepire* (ptp. to fence) = *saep-* fence + *-tum* ptp. suffix; akin to *saepēs* hedge, fence]

sep·tu·ple (sep'tōō pal, -tyōō, sep' tōō'pal, -tyōō'pal), *adj.* *v.* *-pled*, *-pling*. —*adj.* 1. sevenfold; sometimes as great. —*adj.* 2. to make seven times as great. LL *septuplūs* = L *septu-* (*see Septuagint*) + *-plus* -FOLD]

sep·tu·plet (sep tup'lit, -tōō'plit, -tyōō'lit), *n.* 1. a group or combination of seven. 2. Music. a group of seven notes of equal value performed in the same amount of time as normally taken to perform four or six.

sep·tu·plex (sep'tōō pleks', -tyōō pleks, -tyōō'pleks), *adj.* sevenfold; septuplie. [*< LL septu-* (-tōō'pleks), *adj.* sevenfold; septuplie.



A. Septic dehiscing capsule species Yucca

B. Trans section

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